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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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SUBJECT	Electric Sub-Stations on the Warsaw-Stalinogrod Rail Line	NO. OF PAGES	3 25X1
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THIS IS UNEVALUATED INFORMATION

1. In accordance with a business agreement worked out in 1952 between the Polish state trading firm Elektrim and DIA Elektro-Technik, East Germany is manufacturing and delivering to Poland electrical equipment for 16 stationary, and two mobile, electric sub-stations. These sub-stations are to be used to transmit power to electric trains and all 16 are to be put into operation along the rail line Zyrardow-Stalinogrod.[1] Four of the stationary sub-stations have already been constructed. They are located at Skierniewice, Lipce, Koluszki, and Czarnocin. One of the stationary sub-stations is presently being constructed in Lodz and the remaining 11 will be constructed along the rail line from Piotrkow to Stalinogrod. The two mobile sub-stations will be kept in reserve to be used if one of the stationary sub-stations has technical difficulties.

2. All 16 of the stationary sub-stations will have the same layout and will contain identical equipment. Following is a description of a typical sub-station. The numerals are keyed to the annexed sketch:

   a. Two 30-KV open-air systems (Freiluft System). Either or both systems can be used at one time but usually only one is used and the other kept in reserve.

   b. Two 30-KV open-air transmission lines carrying power from the transformer sub-stations at Skierniewice or Piotrkow.

   c. Two 30-KV open-air transmission lines carrying power to the next electric sub-station.

   d. Four transformers each with 35 KVA capacity. All the transformers were constructed recently at VEB Transformatorenwerk "Karl Liebknecht" Berlin-Oberschoeneweide. They work in a 12-phase system and have a transformation ratio from 30 KV primary to 2.9 KV secondary. They are located in the open, close to the wall of the sub-station.

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e. Permanent building housing the sub-station. The building is about 60 meters by by 20 by 4 meters. The walls are about 25 cm. thick and the roof is flat. The windows are small and the interior of the building is continually lighted by electricity. The building is surrounded by a two-meter-high fence and militia patrols are often encountered in the area.

f. Four rectifier cells, each with a two-to six-phase rectifier. These rectifiers have a normal capacity of 660 amperes. They are produced by VEB Elektro-Apparate Werke "J. W. Stalin", Berlin-Treptow, and sell for about 25,000 DME each. The rectifiers convert the 2.9 KV alternating current received from the transformers to 3.3-KV direct voltage, which is then fed to the electric contact line over the railroad tracks. Only one rectifier cell is now in use in most sub-stations. A second will probably be used later when electric-powered freight trains are put in operation on the Warsaw-Stalinogrod line. The third and fourth rectifier cells will be kept permanently in reserve. The fourth cell has so far been installed in only one of the four completed sub-stations (sub-station C at Koluszki).

g. Control panel. One or two attendants are on duty day and night in each sub-station.

h. Ten transmission cells (Schaltzellen). Four of these cells (usually cells 3, 5, 7, and 9) transmit 3.3-KV direct-current voltage to the electric contact line over the railroad tracks. Four of the cells (usually cells 4, 6, 8, and 10) have quick-break switches (Schnellschalter) to protect the rectifier cells in case of a short circuit. One cell (usually cell 2) is used to establish electrical connection with a mobile sub-station in case of emergency. The last cell (no. 1) contains a resonating circuit to combat the disturbances to telephone and telegraph lines caused by electric trains.

i. Four cables transmitting power to the electric contact lines over the railroad tracks.

j. Electric contact lines over the railroad tracks. The tracks are usually located 800 to 1,000 meters from the sub-station.

2. The mobile sub-stations in use in Poland consist of two railroad cars. The first car contains the transmission cells (Schaltzellen) and the control panel. The second car contains one rectifier group and a transformer. The mobile sub-station is usually called to the scene only in case of emergency.

1 [redacted] Comment: See also the more generalized article which appeared in Neues Deutschland of 22 April 1955.

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